

REMARKS

Applicants acknowledge receipt of the Office Action mailed November 29, 2007.

In the Office Action, the Examiner rejected claims 20-23¹, 38, and 39 under 35 U.S.C. § 103(a) as being unpatentable over *Coulthard* (U.S. Patent No. 5,825,286) in view of *Koch et al.* (U.S. Patent No. 5,562,787); rejected claims 26-31 under 35 U.S.C. § 103(a) as being unpatentable over *Coulthard* in view of *Koch*, and further in view of *Handfield* (U.S. Patent No. 5,473,938); and rejected claim 33 under 35 U.S.C. § 103(a) as being unpatentable over *Coulthard* in view of *Koch*, and further in view of *Widener* (U.S. Patent No. 6,199,575).

In this Amendment, Applicants amend claims 20, 38, and 39, and cancel claim 33, without prejudice or disclaimer. Upon entry of this Amendment, claims 20, 22, 23, 26-31, 38, and 39 will be pending. Of these claims, claims 20, 38, and 39 are independent.

The originally-filed specification, claims, abstract, and drawings fully support the amendments to claims 20, 38, and 39. No new matter has been introduced.

Applicants traverse the rejections above and respectfully request reconsideration for at least the reasons that follow.

I. 35 U.S.C. § 103(a) REJECTIONS

Applicants traverse the Examiner's rejection of claims 20, 22, 23, 38, and 39 under 35 U.S.C. § 103(a) as being unpatentable over *Coulthard* in view of *Koch*.

¹ Applicants note that claim 21 was previously cancelled, without prejudice or disclaimer, in the Amendment filed March 19, 2007.

Applicants respectfully submit that independent claims 20, 38, and 39 patentably distinguish over *Coulthard* and *Koch* at least for the reasons described below.

In order to establish a *prima facie* case of obviousness under 35 U.S.C. §103(a), the prior art reference (separately or in combination) must teach or suggest all the claim limitations. See M.P.E.P. § 2142, 8th Ed., Rev. 5 (August 2006). “[I]n formulating a rejection under 35 U.S.C. § 103(a) based upon a combination of prior art elements, it remains necessary to identify the reason why a person of ordinary skill in the art would have combined the prior art elements in the manner claimed.” *USPTO Memorandum* from Margaret A. Focarino, Deputy Commissioner for Patent Operations, May 3, 2007, p. 2. “[T]he analysis supporting a rejection … should be made explicit” and it is “important to identify a reason that would have prompted a person of ordinary skill in the relevant field to combine the [prior art] elements in the manner claimed.” *Id.* (citing *KSR Int’l Co. v. Teleflex, Inc.*, No. 04-1350 (U.S. Apr. 30, 2007)).

Coulthard appears to disclose a vehicular data collection and transmission system and method including selected vehicle operation parameters, such as tire pressure, wheel temperature, and vibration, which are sensed by sensors mounted on wheel modules secured to individual vehicle wheels. The sensed parameters are converted to digital format and the resulting digital data is manipulated to determine if the data falls within predetermined operating ranges. The data and information resulting from the manipulation are used to modulate an RF signal transmitted to another location on the vehicle. (*Coulthard*, Abstract).

As admitted by the Examiner, “Coulthard does not disclose…wherein the sensing device, transmitting device, processing unit, storage device, and the electrical energy

device are produced on the same substrate.” (*Office Action*, p. 3, II. 7-9). In addition, *Coulthard* fails to teach or suggest wherein the sensing device, the transmitting device, the processing unit, the storage device and the electrical energy generating device are integrated on the same substrate by micro-electrical-mechanical system (MEMS) technology.

In order to cure the deficiencies of *Coulthard*, the Examiner relies on *Koch* and alleges “*Koch* discloses that the components of his system are disclosed on a single substrate.” (*Office Action*, p. 4, II. 2-3). *Koch* appears to disclose a method for monitoring tires which use an active, self-powered programmable electronic device installed in or on the interior surface of a pneumatic tire or on a tire rim. The device can be used for monitoring, storing and telemetering information such as temperature, pressure, tire rotations and/or other operating conditions of the pneumatic tire, along with tire identification information. (*Koch*, Abstract). *Koch* further discloses wherein the monitoring device or tag 10 includes a board made of a suitable material to hold various components, one of which is an integrated circuit or micro chip 20. The chip 20 contains a central processing unit for processing commands, a 256 byte random access memory and micro wave radio circuitry for transmission and reception of data. Internal sensors for monitoring temperature, supply voltage, magnetic field strength and ambient light intensity are contained in the chip. (*Koch*, col. 7, II. 40-65).

Koch, however, does not disclose wherein the sensing device, the transmitting device, the processing unit, the storage device and the electrical energy generating device are produced and integrated on the same substrate by micro-electrical-

mechanical system (MEMS) technology. In fact, the Examiner does not rely on *Koch* for such a teaching.

Accordingly, with respect to independent claims 20, 38, and 39, *Coulthard* and *Koch* fail to teach Applicants' claimed combination, including, *inter alia*:

wherein the sensing device, the transmitting device, the processing unit, the storage device and the electrical energy generating device are produced and integrated on the same substrate by micro-electrical-mechanical system (MEMS) technology.

For at least the foregoing reasons, a *prima facie* case of obviousness has not been established with respect to independent claims 20, 38, and 39. Accordingly, independent claims 20, 38, and 39, and claims 22 and 23 that depend from claim 20, are patentable over *Coulthard* and *Koch*. Applicants therefore request that the rejection of claims 20, 22, 23, 38, and 39 under 35 U.S.C. § 103(a) be withdrawn.

Claims 26-31 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over *Coulthard* in view of *Koch*, and further in view of *Handfield*. The deficiencies of *Coulthard* and *Koch* are discussed above.

The Examiner relies on *Handfield* for allegedly disclosing "a method and system for monitoring a parameter of a vehicle tire...[including] a battery that utilizes a capacitor in order to maintain a charge such that [a] sensor can operate even when [a] wheel is not in motion." (*Office Action*, p. 5, line 19 - p. 6, line 7). Such teaching, even if present in *Handfield*, which Applicants do not concede, fails to teach or suggest "wherein the sensing device, the transmitting device, the processing unit, the storage device and the electrical energy generating device are produced and integrated on the same substrate

by micro-electrical-mechanical system (MEMS) technology," as required by claim 20. Accordingly, *Handfield* fails to cure the deficiencies of *Coulthard* and *Koch*, and claims 26-31 are allowable at least due to their dependence from independent claim 20. Applicants therefore request that the rejection of claims 26-31 under 35 U.S.C. § 103(a) be withdrawn.

Claim 33 stands rejected under 35 U.S.C. § 103(a) as being unpatentable over *Coulthard* in view of *Koch*, and further in view of *Widener*. The deficiencies of *Coulthard* and *Koch* are discussed above.

Notwithstanding that the rejection of claim 33 has been rendered moot by the cancellation of claim 33, the Examiner relies on *Widener* for allegedly disclosing "a valve system [which] includes a movable microelectromechanically structured (MEMS) pressure sensor that not only senses pressure but also functions as a mechanical actuator for the valve. . ." (*Office Action*, p. 7, II. 5-8).

Assuming *arguendo* *Widener* teaches a single MEMS pressure sensor, which Applicants do not necessarily concede, there is no suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to combine the references in a manner resulting in the claimed invention. The Examiner fails to show how one of ordinary skill in the art, when considering *Coulthard* and *Koch*, and not having the benefit of Applicants' disclosure, would have been motivated to modify *Coulthard* and *Koch* in view of *Widener* in a manner resulting in Applicants' claimed invention. A teaching of a single sensor that could be produced using MEMS technology does not suggest using MEMS technology in order to integrate

all the elements contained in the claimed “movable unit” on a same substrate (emphases added). In fact, Applicants submit that *Coulthard* and *Koch* actually teach away from the disclosure of *Widener*.

For example, the schematic diagrams in FIGs. 1, 2, 4, and 5 of *Coulthard* and the components illustrated in FIG. 2 of *Koch* clearly depict single, discrete elements separated from each other. Accordingly, *Coulthard* and *Koch* teach away from using MEMS technology in order to integrate all the elements on a same substrate. Thus, one of ordinary skill in the art would view *Coulthard* and *Koch* as teaching not to use MEMS technology for integrating all elements on a same substrate, and would not be motivated to modify *Coulthard* and *Koch* in view of *Widener* in a manner resulting in Applicants’ claimed invention. Applicants therefore request that the rejection of claim 33 under 35 U.S.C. § 103(a) be withdrawn.

II. CONCLUSION

Applicants respectfully submit that claims 20, 22, 23, 26-31, 38, and 39 are in condition for allowance.

The Office Action contains characterizations of the claims and the related art with which Applicants do not necessarily agree. Unless expressly noted otherwise, Applicants decline to subscribe to any statement or characterization in the Office Action.

In view of the foregoing amendments and remarks, Applicants respectfully request reconsideration and reexamination of this application and the timely allowance of the pending claims.

Please grant any extensions of time required to enter this response and charge
any additional required fees to our deposit account 06-0916.

Respectfully submitted,

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